

Yates Centre, Kansas, 8th.
Salina, Kansas, 28th.
Wytheville, Virginia, 6th.

SAND STORMS.

Fort Yates, Dakota, 29th.
Fort Assinaboine, Montana, 21st.
Wickenburg, Arizona, 30th.
Fort McDowell, Arizona, 1st, 5th, 12th, 18th, 24th, 25th, 31st.
Lewiston, Idaho, 30th.
Dayton, Washington Territory, 5th, 23d, 30th.

MIGRATION OF BIRDS.

Geese flying northward: Pensacola, Florida, 23d.
Brants flying southward: Fort Smith, Arkansas, 8th.

NOTES AND EXTRACTS.

REPORT OF THE ALABAMA WEATHER SERVICE, UNDER DIRECTION OF PROFESSOR
P. H. MELL, JR.

MECHANICAL AND AGRICULTURAL COLLEGE,
AUBURN, ALABAMA, September 1, 1884.

August opened with five days of showers, accompanied by thunder and lightning and westerly winds. Clear weather began on the 6th, with a decided fall of temperature; and the month continued cool and dry, with winds from the east and north until the 20th, when the wind changed to the west, and the temperature began to rise rapidly, and a few local showers were reported. The week of the 22-29th was the warmest period of the summer. The rains and winds of the 29th and 30th cooled the atmosphere, and the 31st was clear, with cool breezes from the north and west. With the exception of the one hot week the month was pleasant and uniform in temperature, and the average was lower than that of July. The precipitation was also below the average.

Observers are requested to be very careful in measuring the amount of precipitation. The great discrepancy between reports from the same section of the state leads the Director to suppose that more or less error exists in the manner of measuring, or in the rain-gauges themselves.

State summary.

Mean temperature, 75°.6; highest temperature, 102° at Troy, on the 1st; lowest temperature, 52° at Calera, on the 6th; monthly range of temperature for the state, 50°; greatest monthly ranges at stations, 40° at Jacksonville and Fayette, and 48° at Calera; least monthly ranges of temperature, 15° at Wetumpka, and 30° at Evergreen; greatest daily ranges, 30° at Troy, on the 3d; 40° at Birmingham, on the 28th; least daily ranges of temperature, 0° at Eden, on the 7th, and 6° at Mobile, on the 9th.

Mean depth of rainfall for the state, 2.41 inches; mean daily rainfall for the state, 0.08 inch; largest monthly rainfall, 7.85 inches at Clanton; least monthly rainfall, 0.20 at Greensborough; largest daily rainfall, 2.50 at Clanton, on the 4th.

The days of general rainfall were the 1st, 2d, 3d, 4th, 29th, 30th; average number of days on which rain fell, 6; average number of cloudy days, 6; fair days, 15; clear days, 10; warmest day, 29th; coolest day, 6th.

Prevailing directions of the wind, west and northwest; greatest force of wind was reported from Montgomery, on the 4th—27 miles per hour from the northeast.

The following extract is taken from the August report of the "Nebraska Weather Service," under direction of Professor G. D. Sweezy, of Doane College, Crete, Nebraska:

BOSWELL OBSERVATORY, DOANE COLLEGE,
Crete, Nebraska, August, 1884.

With the issue of the monthly bulletin for July, Prof. S. R. Thompson, who has for many years conducted so ably and faithfully the Volunteer Weather Service for Nebraska, retired from its superintendency with the request that the director of Boswell University should succeed him. It has been with something of hesitation that we have undertaken it, mainly because of the pressure of other duties in connection with the college and the observatory. Realizing however the importance of maintaining and if possible, of extending this service, and that not only the director but all the observers connected with the work freely give their services without remuneration, it has seemed hardly generous to decline, especially as the college with its astronomical and meteorological observatory and library seemed better situated on some accounts than any other station in the state to undertake this work.

General Hazen, Chief Signal Officer, U. S. Army, has kindly extended the offer of his valuable assistance, not only in maintaining but in extending the Nebraska Weather Service. In this it is hoped that many who are interested in the weather problems and meteorological history of the state will co-operate. It is especially desired that persons in various parts of the state, especially the newer western and northern portions will volunteer to act as observers in their own localities. Observations with thermometer and rain-gauge, if nothing more, are desirable.

Weather for August.—Average rainfall: southeast section, 4.02 inches; northeast section, 6.34 inches; southwest section, 3.06 inches; northwest section, 2.85 inches; state, 4.06 inches.

Mean relative humidity: Crete, 82.

Mean temperature: for the state, 71°.3. Average of noon observations, 75°.93.

The following are some of the maximum and minimum temperatures:

Stockham, 92°, 68°; De Soto, 91°, 46°; Crete, 93°, 47°.7.

Wind: Number of miles traveled, Crete, 7,219 miles. Average velocity, Crete, 9.7 miles per hour. Highest velocity, Crete, 36 miles, south.

Miscellaneous.—Fogs: Syracuse, 22d and 28th; Weeping Water, 15th and 28th; De Soto, 14th, 24th, and 28th; Crete, 22d, 25th, and 28th; Beaver Creek, 13th, 17th, and 28th; Red Willow, 10th, 11th, 12th, 13th, and 14th.

Thunderstorms: Central City, 15th and 17th; Keene, 16th and 18th; Beaver Creek, 19th, 25th, and 26th; West Point, 15th and 18th; Red Willow, 15th, 17th, and 19th; Marquette, 13th and 26th; Fairbury, 17th; Superior, 12th, 13th, 15th, 17th, 18th, 19th, and 21st.

REPORT OF THE TENNESSEE WEATHER SERVICE, UNDER DIRECTION OF HON. A.
J. MCWEHINTER.

The month of August was characterized by but few abnormal features, among which were the cool nights during the early part of the month, the high temperature, during the latter part, the severe electric storms of the 3d and 29th, and the deficiency in the rainfall.

The mean temperature was 73°.6, or 2°.4 below that for the previous month, and 1°.6 above that for the corresponding month of last year. The highest temperature was 99°, or 1° above that for August of last year; the lowest temperature was 48°, or 2° above the July minimum and 5° above that for August, 1883. The mean of the maximum temperatures was 4° above and the mean of the minimum temperatures was 1°.7 above those for August, 1883. The highest temperatures were general during the latter portion, and the low temperatures during the early portion of the month.

The average rainfall for the state was 2.08 inches, or 1.35 inches less than for the corresponding month of 1883, and 3.42 inches less than the average for July, 1884. The days of greatest rainfall were the 3d, 21st, 22d, and 29th. The greatest daily rainfall was 3.10 inches on the 29th, at Xenophon, Hancock county. The rainfall was very irregularly distributed, being general only on the above-named days. Many of the rains were very local. The rain of the 3d was the heaviest in the middle division, and that of the 29th was heaviest in the eastern and western divisions. It is a little remarkable that with so small a rainfall only three days in the month were reported entirely free from rain throughout the state.

The severe drought which set in during the early part of the month has had a very damaging effect on the crops of corn, cotton, and tobacco.

REPORT OF THE MISSOURI WEATHER SERVICE; AUGUST, 1884.

The mean temperature at Saint Louis during the month was 74°.4, or 2° 1 below the normal. There were only four places—Carthage, Harrisonville, and Cairo, in the southern part of the state, and Mascoutah in Illinois—where the mean temperature was above that at Saint Louis. The daily means during the month were with but little range, the highest being on the last days of the second decade of the month and the lowest on the 9th. Throughout the state the means were below the normals.

The higher maximums were observed in the latter part of the second decade, and the lower minimums in the latter part of the first decade of the month.

The mean daily range at the central station was 17°.2, being as small as 6°.6 on the 3d, and as large as 25°.5 on the 13th.

There was no rainfall at Saint Louis until the 20th of the month. It was so generally throughout the state also. The amount at the central station was 2.66 inches below the normal for Saint Louis. The distribution over the state was small in the southern part—0.50 at Greenfield, with a large amount toward the northern part, the largest being 6.52 inches at Miami.

The crops, where heard from, were revived by the late rains and are doing well, not having suffered so much as might have been expected from the lack of rain in the first part of the month on account of the comparatively low temperature.

A. RAMEL, Assistant in charge.

Washington University, September 9, 1884.

REPORT OF THE LOUISIANA WEATHER SERVICE, UNDER DIRECTION OF MR.
ROBERT S. DAY.

The early part of the month was comparatively cool, but the last week was very warm. Drought is generally reported in the lowlands. On the hills east of the Mississippi river, where the spring and early summer were dry, good rains have fallen.

The temperature for the month was above the average, but it was not as high as for August, 1883. In New Orleans less rain fell than at any time since the record has been kept. Crops generally have suffered for rain. Cotton is reported shedding. Sugar and rice are spotted, as they have had showers or drought.

State summary.

Mean temperature, 81°.3; highest temperature, 103°.5 at Shreveport and Franklin, on the 29th; lowest temperature, 45° at Lake Providence, on the 4th; greatest daily range of temperature, 45° at Lake Providence, on the 2d; least daily range of temperature, 2°.5 at Vidalia, on the 6th.

Average rainfall, 1.70 inches; greatest daily rainfall, 2.65 inches at Clin-

ton, on the 24th; greatest monthly rainfall, 6.23 inches at Clinton; average number of rainy days, 4.

The following is a summary of the observations made by the observers of the Volunteer Weather Service of Indiana:

Station.	County.	Temperature.			Precipitation.	
		Highest.	Lowest.	Mean.	Total monthly.	Largest daily.
		°	°	°	Amount.	Date.
Marengo.....	Crawford.....	96	55	71.7	3.90	2.80 3
Blue Lick.....	Clark.....	91	53	72.8	3.90	1.20 22
Princeton.....	Gibson.....	92	48	72.1	1.90	0.90 7
Salem.....	Washington.....	96	55	72.1	1.10	0.55 3
Connersville.....	Fayette.....	93	55	72.1	0.68	0.48 22
Noblesville.....	Hamilton.....	88	52	70.2	0.48	0.35 28
Worthington.....	Greene.....	86	53	70.7	1.12	0.64 3
Greenfield.....	Hancock.....	91	50	70.4		
Spiceland.....	Henry.....	91	55	71.0	0.26	0.13 29
Martinsville.....	Morgan.....	91	54	68.9	0.45	0.42 21
Mauzy.....	Rush.....	90	53	69.5	0.57	0.28 22
Richmond.....	Wayne.....	92	52	71.8	0.50	0.26 29
Fort Wayne.....	Allan.....	90	46	67.0	0.70	0.70 28
Logansport.....	Cass.....	90	57	71.5	1.83	0.99 28
Sums.....		12,670	744	992.4	15.69	9.70
Averages for state.....		90.5	53.1	70.9	1.21	0.75

REPORT OF THE OHIO METEOROLOGICAL BUREAU, AUGUST, 1884, UNDER DIRECTION OF PROF. T. C. MENDENHALL.

The mean atmospheric pressure for August, 30.025 inches, is .041 below the mean for the corresponding month of last year. The maximum, 30.379 inches, is .059 higher than the maximum of August, 1883, and the minimum, 29.427, inches, is .351 below that of the minimum of August, 1883. The maximum and the minimum occurred at nearly all stations on the 9th and 29th, respectively.

The mean temperature, 70°.8, is 2°.6 above that of August, 1883, and 1°.24 below the normal for August. The maximum temperature was 98°.0, being exactly the same as that of last year. The minimum temperature, 38°.0, on the 27th, at Junction, is 8°.5 below the minimum of August, 1883. Very low temperatures for the month were reported on the 5th, 8th, and 9th, several stations reporting frost on these dates, but not enough to injure anything.

The most remarkable feature of the reports for the month is the small rainfall reported from nearly all stations. The mean rainfall, 1.45 inches, is .43 below that of the same month of last year, and 2.31 inches below the normal for August. The greatest rainfall, which was 3.24 inches, at Wil-

lington, is .52 below the normal, while the least rainfall, .45, at Ohio State University, is 3.31 below the normal. The northern and southern portions of the state had more rain than the central part.

The average number of clear days, 17.7, is 4.7 above that of August, last year, while the number of days on which rain fell is nearly the same.

The prevailing direction of the wind was from the southwest.

State summary.

Mean barometer, 30.035 inches.

Highest barometer, 30.379 inches on the 9th, at Oberlin.

Lowest barometer, 29.427 inches on the 30th, at Jefferson.

Range of barometer, .952 inch.

Mean relative humidity, 71.0 per cent.

Mean temperature, 70°.8.

Highest temperature, 98°.0, on the 20th, at Logan.

Lowest temperature, 38°.0, on the 27th, at Junction.

Range of temperature, 60°.0.

Mean daily range of temperature, 23°.7.

Greatest daily range of temperature, 44°.0, on the 26th at Ohio State University.

Least daily range of temperature, 6°.8, on the 28th, at Toledo.

Average number of clear days, 17.7.

Average number of fair days, 9.9.

Average number of cloudy days, 3.4.

Number of days on which rain fell, 6.3.

Mean rainfall, 1.45 inches.

Average daily rainfall, .047 inch.

Greatest rainfall, 3.24 inches, at Wilmington.

Least rainfall, .45 inches, at Ohio State University.

Prevailing direction of wind, southwest.

The following meteorological summary is taken from the Georgia crop report, prepared under the direction of Hon. J. T. Henderson, Commissioner of Agriculture.

Districts.	Temperature.			Precipitation.
	Maximum.	Minimum.	Mean.	
Northern counties.....	94.0	55.5	75.6	1.25
Middle counties.....	92.9	53.1	77.7	2.86
Southwest counties.....	94.0	66.5	80.6	1.94
East counties.....	96.5	59.0	78.2	4.29
Southeast counties.....	90.5	66.2	80.5	5.69
Averages for state.....	93.6	60.1	78.5	3.32